

Consumer Confidence Report

# 2012



**CORONA**

Department of Water and Power

*"Protecting Public Health"*

## MESSAGE FROM THE GENERAL MANAGER

**T**he Consumer Confidence Report demonstrates the Department of Water & Power's ability to meet or exceed health standards for the water we supply to our customers. More importantly, it also reflects our commitment to our customers that we will always strive to provide you with the highest quality product and service.

This report is an annual water quality report the Department of Water & Power is required to provide our customers in order to help them make informed choices about the water they drink. Additionally, the report provides an opportunity for the Department of Water & Power to share information with our customers about our efforts to deliver safe drinking water, without interruption, 24 hours a day, 365 days of the year. Our staff strives to improve our efficiency, contain and reduce costs, engineer new pipelines and water delivery systems, repair and replace aging infrastructure, provide excellent customer service, and maintain our facilities. In an effort to improve our customers' understanding of the Department of Water & Power, we will be offering tours of our facilities in the coming year.



I am proud of the Department of Water & Power's ability to uphold our mission to "Protect Public Health." I am also proud of and appreciate the efforts made by many of our customers who have taken increasingly diligent steps toward decreasing their water usage. Those water conservation efforts will help us achieve our goal of reducing water use "20% by 2020."

I encourage you to contact me should you have any questions regarding this report or require additional information.

Jonathan Daly  
DWP General Manager  
951-736-2477

*"...the report provides an opportunity for the Department of Water & Power to share information with our customers about our efforts to deliver safe drinking water, without interruption, 24 hours a day, 365 days of the year."*

## Informed Customers

Last year, as in years past, your tap water met all United States Environmental Protection Agency (USEPA) and State drinking water health standards. The City of Corona safeguards its water supplies and we are proud to report that our system has not violated a maximum contaminant level.

This report is a snapshot of the water quality in 2011. Included are details about where your water comes from, what it contains, and how it compares to the State's standard.

## Corona's Water Sources

In 2011, Corona residents and businesses used approximately 13 billion gallons of drinking water. Of that water, 56% was pumped from groundwater wells owned and operated by the City of Corona. Another 35% came from the Colorado River by way of Lake Mathews. The final 9% is from the State Water Project in Northern California, coming to us by way of the California Aqueduct.

## Water Treatment

The water from the Colorado River requires treatment to remove and inactivate harmful organisms. This process is accomplished using the City of Corona's two surface water treatment facilities: the Sierra Del Oro and Lester Water Treatment Facilities. These facilities incorporate the use of coagulants in conjunction with multimedia filtration and disinfection. In independent laboratory testing, 100% of the samples taken in 2011 were free of harmful organisms.

About half of the groundwater pumped in Corona is sent to a state-of-the-art reverse osmosis membrane treatment facility, the Temescal Desalter. This facility incorporates Nitrate and Total Dissolved Solids (TDS) removal, and also provides disinfection.

The Department of Water & Power disinfects the distribution system with mono chloramines (a ratio of chlorine and ammonia). This allows us to achieve long-lasting protection against organisms and reduce the production of disinfection by-products. Disinfection by-products are formed when disinfectants (i.e. chlorine and mono chloramines) react with naturally occurring organic matter in water.



*Lester Water Treatment Facility*

## Blending

The Department of Water & Power has six active blending facilities that blend low nitrate, low fluoride, low perchlorate and low Total Dissolved Solids water with the remaining groundwater sources to deliver safe, reliable drinking water to your tap.

You will notice in the tables of detected contaminants that our groundwater exceeds the primary standard for fluoride, nitrate and perchlorate. The Department of Water & Power is required by law to report the range of all samples monitored, as well as the average concentration delivered to your tap. The averages are much lower because the Department of Water & Power blends water from several sources to meet water quality standards. The blending stations are continuously monitored and routinely sampled to ensure that the water delivered to your tap meets all health standards with a safety margin of no more than 10%. Please refer to the "Treated Average System Water" column in the tables at the end of the report for a more accurate representation of system water quality.

For more information about fluoridation, oral health, and current issues visit: [www.cdph.ca.gov/certlic/drinkingwater/Pages/Fluoridation.aspx](http://www.cdph.ca.gov/certlic/drinkingwater/Pages/Fluoridation.aspx).

## Reclaimed Water

The Department of Water & Power demonstrated our commitment to water supply reliability when we developed and built our reclaimed water system in 2006. The City recognized that California and our own region face many challenges that may affect our drinking water supply, such as periodic drought, a growing population and environmental constraints.

The reclaimed water system uses highly treated wastewater from our advanced, hi-tech water reclamation facilities and distributes it to various parts of the City in purple pipes. The reclaimed water system is completely separate from the drinking water system. Reclaimed water is used primarily on landscaping at parks, schools and parkway areas, but is also used for street cleaning by the City's contractor and even in commercial buildings for trap priming. By re-using water that would normally have been wasted, we save potable water for our homes and businesses.

The City of Corona has made substantial progress in constructing its reclaimed water system, which began serving reclaimed water to customers in the summer of 2006. We currently have 227 connections which used approximately 3.16 million gallons per day in 2011, with many new sites in the process of being converted to reclaimed water use.



The City of Corona's reclaimed water system consists of approximately 41.2 miles of pipeline, three storage reservoirs and three pump stations. The City will also be expanding its reclaimed water system in 2012 with three new projects – the Masters Drive Extension, Stagecoach Park and Butterfield Park Reclaimed Waterline and City Park. In addition, the City is currently exploring ways to use reclaimed water to help recharge our groundwater basins in an effort to help boost our local supplies.

The reclaimed water system produced 1.2 billion gallons of reclaimed water in 2011. Soon, most parks and schools in Corona will be using this valuable source of water to irrigate most landscape areas. During 2011, 6 agricultural customers, 3 private businesses, 27 Landscape Maintenance Districts, 1 church, 3 schools, 1 construction site and El Cerrito Park were using reclaimed water. These conversions use an additional 65 million gallons of reclaimed water per year.

### **Continued Conservation: Ensuring Long-Term Water Supply Reliability**

California's drought is over, hydrologically speaking. In 2011 Governor Brown rescinded the State's emergency drought declaration originally issued on June 12, 2008. Yet in his proclamation, Governor Brown urged Californians to continue conserving water. Why the continued push for water conservation? The State lacks a reliable long-term water supply, particularly in Southern California. It is critical that all Californians use water efficiently.

### **Challenges to Our Imported Water Supplies**

Corona, like much of California, depends on imported water to meet demands for its customers. In 2011, 44% of our water supply was imported through the Metropolitan Water District: 9% from the State Water Project (SWP) in Northern California and 35% from the Colorado River.

#### *Pumping Restrictions on the Delta*

Pumping restrictions on the Delta due to the Endangered Species Act remain in effect. The State is required to maintain certain flow and volume for the Delta in order to maintain designated habitat. It is difficult to meet 100% of requested deliveries due to these pumping restrictions.

After a dry winter neither the SWP nor the Central Valley Project (CVP) are able to deliver 100% of water requests this year. As of February 15, 2012, the projected delivery allocation from the SWP was 50% of requests. As of April 12, 2012, the projected delivery allocation from the CVP was 75% of requests.





Lake Mead

### *Drought on the Colorado River*

The Colorado River is in the midst of a decade long drought cycle. Water from the Colorado River is shared per the 1922 Colorado River Compact, which allocates water to seven states and Mexico. The Upper Colorado region states, consisting of Colorado, Utah, New Mexico and Wyoming receive 7.5 million acre-feet of water per year. Lower region states, including Arizona, California and Nevada receive 7.5 million acre-feet of Colorado River water per year; California receives the largest share at 4.5 million acre-feet per year. Mexico receives 1.5 million acre-feet per year. (An acre-foot of water is 325,851 gallons. This is enough water for two typical households for a whole year.) For many years, California has

received its share of Colorado River water and up to 50% of the surplus of water available from other states not using their full allotment. Due to the drought and other states now taking their fair share, the surplus of water California once received is no longer available. Many experts believe the Colorado River has been over-allocated; the amounts set in the 1922 compact were based on levels in wet years, and may not be normal volumes the Colorado River can sustain.

### **Delta Water Package and 20% by 2020**

The California State Legislature, in November 2009, passed the Delta Water Package. This comprehensive legislative package on water policy, signed into law by then Governor Arnold Schwarzenegger, recognized the importance for California to have a sustainable, reliable water supply for residents and businesses. As part of this legislative package, Senate Bill No. 7 requires all urban water agencies to reduce statewide per capita water consumption 20% by 2020. Corona has done a good job of reducing water use so far, but we still have some work to do.



So how can you help by reducing your water use? Think about your home or business. What are some ways you can reduce your personal consumption by 20%? For example, can you take shorter showers a few



days out of the week? Or could you install a water-saving fixture such as a low-flow showerhead, faucet aerator, or high-efficiency clothes washer? Do you have a leaky toilet that needs to be fixed?

What about outdoors? Have you replaced your standard sprinkler controller with a “smart” timer that adjusts for the weather? It does the work so you don’t have to! Or try doing the water limbo with your lawn: take a minute off of each of your stations this summer. Give your yard a week or two to adjust, and then try taking another minute off. Keep going until your yard is happy using less water. See how low you can go with your water usage! Have you considered removing some of your turf and replacing it with low water-using plants? We live in a semi-arid climate; using plants that have adapted to live in this type of weather means less water is needed to irrigate. Or, could you install drip irrigation in your existing planter areas? Drip irrigation puts water where it is needed – at the plant roots. This means you won’t be feeding weeds in your planters.

### Think About Water; What Does This Mean for Corona?

Only about 3% of the earth’s water is fit for drinking, and two-thirds of that water is stored in ice caps and glaciers. Yet many of us don’t think twice about the water that we use every day. All too often, water that has been pumped from the ground or imported from long distances, cleaned and treated is running down the storm drain – wasted. Water

is a precious resource; we all need it to live. Where would we be without it? The last few years have proven that water availability is cyclical. Last winter we refilled the State’s reservoirs with an above-average snowpack. This year, the snowpack is measuring below average. We can’t assume that every year will be a wet year. It’s time to rethink our views about water, embrace water use efficiency as an everyday practice, and all do our part to ensure that our resources will last for future generations.

Our Water Resources Team is here to help you save water. We offer landscape check-ups, rebates and landscape classes. Please contact the Water Resources Team at 951-736-2234 or by email at [StopTheDrop@discovercorona.com](mailto:StopTheDrop@discovercorona.com) to help achieve our 20% reduction. Remember, make every drop count – use water efficiently.

### Tour Our Facilities

A lot goes on behind the scenes to provide our customers with clean and affordable drinking water. Do you want to learn more about how your water is treated and delivered? Are you interested in seeing how we produce reclaimed water? Attend one of our quarterly facility tours. Contact our Water Resources Team at 951-736-2234 or by e-mail at [StopTheDrop@discovercorona.com](mailto:StopTheDrop@discovercorona.com) to sign up for an upcoming tour. You must be at least 18 years old and a customer of the Department of Water & Power to attend.



Yuma Reservoir

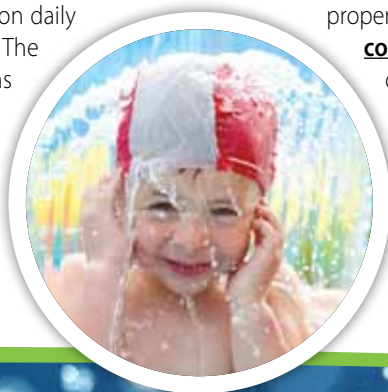
## Tiered Rates and Water Budgets

In April 2010, the Department of Water & Power implemented its Tiered Rate and Water Budget program. Tiered rates and water budgets promote efficient water use and resource conservation, provide fair rates and are an equitable way to share resources. The water budget provides each customer with a budget that uses the customer's unique characteristics. All Department of Water & Power customers receive a monthly water budget.



Residential customers receive a water budget that has two components: an indoor budget and an outdoor budget. The indoor budget provides 60 gallons per person per day in the billing cycle, based on the number of people in the home. The default indoor budget for a single family

home is four people per household, and two people for each unit in a multi-family residence. The outdoor budget is based on daily weather data and the amount of landscaped area. The outdoor budget will decrease during cooler months and increase in warmer summer months, because it is using weather data to determine how much water needs to be applied.



Commercial and industrial mixed use and structure accounts (accounts serving a building and irrigation or just a building) receive a budget based on a three-year rolling average. For accounts that have not been established for more than a year, the budget would equal actual use in the first year. Landscapes with a dedicated meter receive an outdoor budget based on landscaped area and weather data, just like residential accounts.

## Variance Program

The Department of Water & Power has a variance program to request changes to the water budget if the number of people in the residence is greater than the default budget or if the irrigated area estimate is not correct. A variance may also be granted if you find and fix a leak on your property. Forms are available online at [www.discovercorona.com/tieredrates](http://www.discovercorona.com/tieredrates), at City Hall, or can be mailed to you by

calling 951-736-2321. Water use efficiency programs are also available to help customers stay within their water budget. Call the Water Resources Team at 951-736-2234 for more information.



## ***Did you know?***

- There are 748 gallons of water in one unit of water
- One acre-foot of water equals 325,851 gallons or 435.6 billing units
- One acre-foot of water can supply two typical families with water for a whole year
- A leaky toilet can waste between 30 to 500 gallons of water per day

## ***Did you know that what goes down your drain may end up in the natural water course?***

While water reclamation treatment removes most pollutants, even trace amounts of some substances may be harmful to the environment. The best solution is to prevent pollution from going down the drain in the first place.

### ***Dispose of unwanted medicine properly... No Drugs Down the Drain!***

For years, it was recommended to flush unwanted medicine down the drain to protect children and pets from accessing it, and to ensure against illegal recovery of controlled substances. Today, there are better options. The City of Corona Department of Water & Power and the Police Department are working together to protect our environment from the harmful effects of improperly discarded unused medications. For your



convenience, a pharmaceutical disposal bin has been placed at the Corona Police Department lobby located at 730 Corporation Yard Way. For more information, please call 951-736-2330.

### ***Keep drains free of cooking fats, oils and grease.***

When flushed down the drain, cooking fats, oils and grease, or "FOG", can block sewer lines, causing raw sewage to back up into your home or into neighborhood streets and storm drains. Overflows can pose health and environmental hazards. Keep your sewer lines FOG-free by scraping cooking fats into the garbage or into your food scrap recycling bin, where available – not down the drain.

## General Water Quality Information

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, that can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides that may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.



- Organic chemical contaminants, including synthetic and volatile organic chemicals, that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural application, and septic systems.
- Radioactive contaminants that can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure your tap water is safe to drink, the USEPA and the California Department of Public Health (CDPH) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. CDPH regulations also establish limits for contaminants in bottled water that provide the same protection for public health.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline at 800-426-4791.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at 800-426-4791.

## Nitrate

Nitrate in drinking water at levels above 45 mg/L is a health risk for infants of less than six months of age. Such nitrate levels in drinking water can interfere with the capacity of the infant's blood to carry oxygen, resulting in a serious illness; symptoms include shortness of breath and blueness of the skin. Nitrate levels above 45 mg/L may also affect the ability of the blood to carry oxygen in other individuals, such as pregnant women

and those with certain specific enzyme deficiencies. If you are caring for an infant, or you are pregnant, you should ask advice from your health care provider.

## Lead

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Corona is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.



## Lead and Copper Rule Monitoring

The Lead and Copper Rule (LCR) was developed to protect public health by minimizing lead and copper levels in drinking water. The LCR established an action level of 15 parts per billion (ppb) for lead and 1.3 parts per million (ppm) for copper based on the 90th percentile level of tap water samples collected. Lead and copper are sampled on a mandated three year testing cycle with sampling conducted at the customer's tap.

*Please see pages 19 through 21 for key to abbreviations and footnotes*

Parameter	Units	State MCL	PHG	State DLR	Date Sampled	90 <sup>th</sup> Percentile	No. Sites Sampled	No. Sites Exceeding AL
Lead	ppb	AL=15	0.2	5	2011	<5	50	2
Copper	ppm	AL=1.3	0.3	0.05	2011	0.1	50	0

## Chromium-6

On July 27, 2011, the Office of Environmental Health Hazard Assessment (OEHHA) established a public health goal (PHG) for chromium-6 (hexavalent chromium) of 0.02 parts per billion (ppb). The PHG will contribute to CDPH's development of a primary drinking water standard (maximum containment level, MCL) that is specific for chromium-6. Please refer to <http://www.cdph.ca.gov/certlic/drinkingwater/Pages/Chromium6.aspx> for more information.

## Source Water Assessment

In accordance with the Federal Safe Drinking Water Act (SDWA), the State Department of Public Health Division of Drinking Water and Environmental Management developed a program, called the Drinking Water Source Assessment and Protection (DWSAP) Program, to assess the vulnerability of drinking water sources to contamination. Assessments of the drinking water sources for the City of Corona were completed as early as December 2002. The assessment concluded that the City of Corona's sources are considered most vulnerable to the following activities not associated with any detected contaminants in the water supply: automobile – gas stations, automobile – repair shops, chemical/petroleum pipelines, chemical/petroleum processing/storage, dry cleaners, historic waste dumps/landfills, housing – high density, lagoons/liquid wastes, machine shops, managed forests, metal plating/finishing/fabricating, mining – sand/gravel, NPDES/WDR permitted discharges, photo processing/printing, plastics/synthetics producers, railroad yards/maintenance/fueling areas, sewer collection systems, and utility stations – maintenance areas. A copy of the complete assessments are available through the City of Corona's City Clerk's office at 400 S. Vicentia, Corona, CA 92882, or by using the online Public Records Request form at [www.discovercorona.com](http://www.discovercorona.com).

## Primary Standards – Mandatory Health-Related Standards

Please see pages 19 through 21 for key to abbreviations and footnotes

Parameter	Units	State MCL [MRDL]	PHG (MCLG) [MRDLG]	State DLR	Range Average	Major Sources in Drinking Water			
-----------	-------	------------------	--------------------	-----------	---------------	---------------------------------	--	--	--

### CLARITY

Combined Filter Effluent Turbidity	NTU	TT 0.3	NA	–	Highest	Metropolitan Water District	0.13	Soil runoff	
	%	95(a)			% < 0.3	Henry J. Mills Water Treatment Plant	100		
Combined Filter Effluent Turbidity	NTU	TT 0.3	NA	–	Highest	City of Corona, Lester & Sierra Del Oro	0.17	Soil runoff	
	%	95(a)			% < 0.3	Water Treatment Facilities	100		

Parameter	Units	State MCL [MRDL]	PHG (MCLG) [MRDLG]	State DLR	Range Average	Regulated in Distribution System			Major Sources in Drinking Water
-----------	-------	------------------	--------------------	-----------	---------------	----------------------------------	--	--	---------------------------------

### MICROBIOLOGICAL CONTAMINANTS

Total Coliform Bacteria (Total Coliform Rule)	%	5.0 (b)	(0)	–	Range	Highest % of positive samples collected in any one month = 0.8%				Naturally present in the environment
					Average	Total number of positive samples collected in 2011 = 1				
Fecal Coliform and E. Coli (Total Coliform Rule)	(c)	(c)	(0)	–	Range	Distribution System Wide: ND				Human and animal fecal waste
					Average	Distribution System Wide: ND				
Heterotrophic Plate Count (HPC)	CFU/ mL	TT	NA	NA	Range	Distribution System Wide: ND-550				Naturally present in the environment
					Average	Distribution System Wide: 5.5				
Parameter	Units	State MCL [MRDL]	PHG (MCLG) [MRDLG]	State DLR	Range Average	State Project Water	Colorado River Water	Ground Water	Treated Average System Water	Major Sources in Drinking Water

### RADIOACTIVE CONTAMINANTS (j)

Gross Alpha Particle Activity	pCi/L	15	(0)	3	Range	–	3-5	0.17-13.2	–	Erosion of natural deposits
					Average	–	4	4.7	–	
Uranium	pCi/L	20	0.43	1	Range	–	2-3	ND-17	–	Erosion of natural deposits
					Average	–	3	5.7	–	

Parameter	Units	State MCL [MRDL]	PHG (MCLG) [MRDLG]	State DLR	Range Average	State Project Water	Colorado River Water	Ground Water	Treated Average System Water	Major Sources in Drinking Water
<b>INORGANIC CONTAMINANTS</b>										
<b>Arsenic</b>	ppb	10	0.004	2	Range	ND	2.5	ND-2.8	ND	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes
					Average	ND	2.5	0.8	ND	
<b>Barium</b>	ppm	1	2	0.1	Range	ND	0.12	ND-0.15	ND	Discharges of oil drilling wastes and from metal refineries; erosion of natural deposits
					Average	ND	0.12	0.02	ND	
<b>Fluoride</b> <sup>(e, h, k)</sup>	ppm	2	1	0.1	Range	0.2-0.8	0.3	ND- <b>2.3</b>	ND-0.9	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
					Average	0.7	0.3	0.4	0.3	
<b>Nickel</b>	ppb	100	12	10	Range	ND	ND	ND-0.38	ND	Erosion of natural deposits; discharge from metal factories
					Average	ND	ND	ND	ND	
<b>Nitrate (as N03)</b> <sup>(d, e, k)</sup>	ppm	45	45	2	Range	ND-3.2	ND	ND- <b>98</b>	ND-31	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
					Average	2.3	ND	39	16	
<b>Perchlorate</b> <sup>(e, i, k)</sup>	ppb	6	6	4	Range	ND	1.1	ND- <b>10</b>	ND	Perchlorate is an inorganic chemical used in solid rocket propellant, fireworks, explosives, flares, matches, and a variety of industries. It usually gets into drinking water as a result of environmental contamination from historic aerospace or other industrial operations that used or use, store, or dispose of perchlorate and its salts
					Average	ND	1.1	2.3	ND	
<b>Selenium</b>	ppb	50	30	5	Range	ND	ND	5.9	ND	Discharge from petroleum, glass, and metal refineries; erosion of natural deposits; discharge from mines and chemical manufacturers; runoff from livestock lots (feed additive)
					Average	ND	ND	ND	ND	



Parameter	Units	State MCL [MRDL]	PHG (MCLG) [MRDLG]	State DLR	Range Average	State Project Water	Colorado River Water	Ground Water	Treated Average System Water	Major Sources in Drinking Water
-----------	-------	------------------	--------------------	-----------	---------------	---------------------	----------------------	--------------	------------------------------	---------------------------------

#### SYNTHETIC ORGANIC CONTAMINANTS including Pesticides/PCBs

Dibromochloro-propane (DBCP)	ppt	200	1.7	10	Range	ND	ND	ND-37	ND	Banned nematocide that may still be present in soils due to runoff/leaching from former use on soybeans, cotton, vineyards, tomatoes, and tree fruit
					Average	ND	ND	ND	ND	

#### VOLATILE ORGANIC CONTAMINANTS

Tetrachloroethylene (PCE)	ppb	5	0.06	0.5	Range	ND	ND	ND-0.7	ND	Discharge from factories, dry cleaners, and auto shops (metal degreaser)
					Average	ND	ND	0.07	ND	
Trichloroethylene (TCE)	ppb	5	1.7	0.5	Range	ND	ND	ND-2.1	ND	Discharge from metal degreasing sites and other factories
					Average	ND	ND	0.60	ND	

#### SECONDARY STANDARDS—Aesthetic Standards

Chloride	ppm	500	NA	NA	Range	27-38	89	ND-240	28	Runoff/leaching from natural deposits; seawater influence
					Average	32	89	132	28	
Color	Units	15	NA	NA	Range	1	1-3	ND-3	ND	Naturally-occurring organic materials
					Average	1	2	ND	ND	
Foaming Agents (MBAS)	ppb	500	NA	NA	Range	ND	ND	ND-0.1	ND	Municipal and industrial waste discharges
					Average	ND	ND	ND	ND	
Manganese <sup>(f, k)</sup>	ppb	50	NL=500	20	Range	ND	ND	ND- <b>840</b>	ND-1.5	Leaching from natural deposits
					Average	ND	ND	43	0.1	
Specific Conductance <sup>(k)</sup>	µS/cm	1600	NA	NA	Range	230-480	970	2- <b>1800</b>	230	Substances that form ions when in water; seawater influence
					Average	300	970	1163	230	
Sulfate	ppm	500	NA	0.5	Range	22-42	220-230	0.6-360	7.8	Runoff/leaching from natural deposits; industrial wastes
					Average	32	220	182	7.8	

Parameter	Units	State MCL [MRDL]	PHG (MCLG) [MRDLG]	State DLR	Range Average	State Project Water	Colorado River Water	Ground Water	Treated Average System Water	Major Sources in Drinking Water
-----------	-------	------------------	--------------------	-----------	---------------	---------------------	----------------------	--------------	------------------------------	---------------------------------

#### SECONDARY STANDARDS—Aesthetic Standards – continued

<b>Total Dissolved Solids</b> <sup>(e, k, t)</sup>	ppm	1000	NA	NA	Range	150-190	600	ND-1200	180-620	Runoff/leaching from natural deposits
					Average	170	600	745	435	
<b>Turbidity</b>	Units	5	NA	NA	Range	0.04-0.07	0.48-0.49	ND-0.5	ND	Soil runoff
					Average	0.05	0.49	0.04	ND	
<b>Zinc</b>	ppm	5	NA	0.05	Range	ND	ND	ND-2.9	ND	Runoff/leaching from natural deposits; industrial wastes
					Average	ND	ND	ND	ND	

#### UNREGULATED CHEMICALS REQUIRING MONITORING (STATE AND FEDERAL ) (g)

#### Health Effects

<b>Boron</b> <sup>(p)</sup>	ppm	NA	NL=1	0.1	Range	0.13	0.12	0.36-4.7	0.26-0.4	The babies of some pregnant women who drink water containing boron in excess of the notification level may have an increased risk of developmental effects, based on studies in laboratory animals
					Average	0.13	0.12	1.2	0.3	
<b>Chromium VI</b> <sup>(q)</sup>	ppb	NA	0.02	1	Range	0.14	0.03	ND-1.4	–	NA
					Average	0.14	0.03	0.68	–	
<b>Vanadium</b>	ppb	NA	NL=50	3	Range	ND	ND	ND-11	ND	The babies of some pregnant women who drink water containing vanadium in excess of the notification level may have an increased risk of developmental effects, based on studies in laboratory animals
					Average	ND	ND	4.8	ND	

## Other Parameters

Chemical	Units	State MCL [MRDL]	PHG (MCLG) [MRDLG]	State DLR	Range Average	State Project Water	Colorado River Water	Ground Water	Treated Average System Water
Alkalinity	ppm	NA	NA	–	Range	24-79	120-130	ND-320	17-130
					Average	55	120	202	55
Calcium	ppm	NA	NA	–	Range	14-17	68-69	ND-170	5-63
					Average	16	69	107	23
Hardness <sup>(*)</sup>	ppm	NA	NA	–	Range	48-98	280	ND-680	14-23
					Average	65	280	386	80
Magnesium	ppm	NA	NA	–	Range	7-8	26	ND-70	ND-19
					Average	8	26	29	6
pH	pH Units	NA	NA	–	Range	8.3-8.7	8.3-8.5	6.1-7.8	7.1-8.8
					Average	8.6	8.4	7.4	7.8
Potassium	ppm	NA	NA	–	Range	1.6-2.1	4.7	ND-11	ND
					Average	1.8	4.7	3.5	ND
Sodium <sup>(*)</sup>	ppm	NA	NA	–	Range	28-37	90-92	ND-160	32
					Average	32	91	93	32
Bicarbonate	ppm	NA	NA	–	Range	–	–	ND-390	21-160
					Average	–	–	247	68

## 2012 Annual Water Quality Report For 2011

	UNIT	State MCL [MRDL]	PHG (MCLG) [MRDLG]	State DLR	Range Avg/Max RAA	Distribution System Wide	Major Sources in Drinking Water	Health Effects Language
<b>DISINFECTION BY-PRODUCTS, DISINFECTANT RESIDUALS, AND DISINFECTION BYPRODUCT PRECURSORS FEDERAL RULE (m)</b>								
<b>Total Trihalomethanes (THM) (n)</b>	ppb	80	NA	1	Range	ND-45	By-product of drinking water chlorination	Some people who use water containing trihalomethanes in excess of the MCL over many years may experience liver problems, kidney, or central nervous system problems, and may have an increased risk of getting cancer
					Max RAA	17		
<b>Halocetic Acids (o)</b>	ppb	60	NA	1	Range	ND-19	By-product of drinking water chlorination	Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer
					Max RAA	7.2		
<b>Bromate (Mills - WR-24 Conn.) (l)</b>	ppb	10	0.1	1	Range	ND-7.6	By-product of drinking water ozonation	Some people who drink water containing bromate in excess of the MCL over many years may have an increased risk of getting cancer
					Max RAA	4.5		
<b>Chloramines</b>	ppm	[4]	[4]	NA	Range	0.5-3	Drinking water disinfectant added for treatment	Some people who drink water containing chloramines well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chloramines well in excess of the MRDL could experience stomach discomfort or anemia
					Max RAA	1.54		
<b>DBP Precursors Control (TOC)</b>	ppm	TT	NA	0.3	Range	2.2-3.1	Various natural and man made sources	Total organic carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection by products. These by products include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these by products in excess of the MCL may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increased risk of cancer
					Avg	2.5		

## Key to Abbreviations

<b>CFU/mL</b>	Colony Forming Units per Milliliter
<b>DBP</b>	Disinfection By-products
<b>DLR</b>	Detection Limits for Purposes of Reporting
<b>MBAS</b>	Methylene Blue Active Substances

<b>N</b>	Nitrogen
<b>NA</b>	Not Applicable
<b>ND</b>	Not Detected
<b>NL</b>	Notification Level
<b>NTU</b>	Nephelometric Turbidity Units
<b>pCi/L</b>	picoCuries per Liter
<b>ppb</b>	parts per billion or micrograms per liter (µg/L)

<b>ppm</b>	parts per million or milligrams per liter (mg/L)
<b>ppt</b>	parts per trillion or nanograms per liter (ng/L)
<b>RAA</b>	Running Annual Average

<b>TOC</b>	Total Organic Carbon
<b>µS/cm</b>	microSiemen per centimeter; or micromho per centimeter (µmho/cm)

## Extended Abbreviations

**Maximum Contaminant Level (MCL):** The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste and appearance of drinking water.

**Maximum Contaminant Level Goal (MCLG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency.

**Public Health Goal (PHG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

**Primary Drinking Water Standard (PDWS):** MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

**Maximum Residual Disinfectant Level (MRDL):** The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

**Maximum Residual Disinfectant Level Goal (MRDLG):** The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

**Regulatory Action Level:** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

**Treatment Technique (TT):** A required process intended to reduce the level of a contaminant in drinking water.

## Footnotes

- (a) The turbidity level of the filtered water shall be less than or equal to 0.3 NTU in 95% of the measurements taken each month and shall not exceed 1 NTU at any time. Turbidity, a measure of the cloudiness of the water, is an indicator of treatment performance. The averages and ranges of turbidity shown in the Secondary Standards were based on the treatment plant effluent.
- (b) Total coliform MCLs: No more than 5.0% of the monthly samples may be total coliform-positive. Compliance is based on the combined distribution system sampling from all the treatment facilities. In 2011, 1,563 samples were analyzed and one was positive for total coliforms. The MCL was not violated.
- (c) *E. coli* MCL: The occurrence of two consecutive total coliform-positive samples, one of which contains *E. coli*, constitutes an acute MCL violation. The MCL was not violated.
- (d) State MCL is 45 mg/L as nitrate, which is the equivalent of 10 mg/L as N.
- (e) Fluoride, nitrate, perchlorate, and TDS are a part of Corona's blending plan to reduce the levels being delivered to the consumer's tap. Refer to the "Treated Average System Water" column for a more accurate representation of system water quality.
- (f) The high concentration of Manganese is from two groundwater wells of many that the City utilizes. Refer to the "Treated Average System Water" column for a more accurate representation of system water quality.
- (g) Unregulated contaminant monitoring helps the USEPA and CDPH determine where certain contaminants occur and whether the contaminants need to be regulated.





- (h) City of Corona was in compliance with all provisions of the State's Fluoridation System Requirements. This is part of the City of Corona's blending plan to reduce the levels of fluoride being delivered to the consumers tap. Refer to the "Treated Average System Water" column for a more accurate representation of system water quality.
- (i) Perchlorate reporting level is 4 ppb.
- (j) Data collected from four consecutive quarters of monitoring.
- (k) This constituent was detected at high levels exceeding the MCL at the high-lighted source. Please note that this water is blended with water from other sources to provide customers with the highest quality drinking water.
- (l) Bromate reporting level is 3 ppb and reported from Mills Filtration Plant Metropolitan Water District (MWD). Mills MWD water is blended with other Corona water sources to provide customers with the highest quality drinking water.
- (m) The City of Corona was in compliance with all provisions of the Stage 1 Disinfectants/ Disinfection By-products (D/DBP) Rule. Compliance was based on the RAA.
- (n) Reporting level is 0.5 ppb for each of the following: bromodichloromethane, bromoform, chloroform, and dibromochloromethane.
- (o) DLR is 1.0 ppb for each of the following: dichloroacetic acid, trichloroacetic acid, monobromoacetic acid, and dibromoacetic acid; and 2.0 ppb for monochloroacetic acid.
- (p) The sources that were detected for Boron are all directed to the Temescal Desalter for reverse osmosis treatment. The treated water is monitored at the effluent of the facility which is represented in the "Treated Average System Water" column.
- (q) Chromium VI reporting level is 1.0 ppb.
- (r) Hardness is the sum of polyvalent cations present in the water, generally magnesium and calcium. The cations are usually naturally occurring.
- (s) Sodium refers to the salt present in the water and is generally naturally occurring.
- (t) Total Dissolved Solids (TDS) is a measure of the total amount of all the materials that are dissolved in water. These minerals, both natural and anthropogenic (made by humans), are mainly inorganic solids, with a minor amount of organic material.

## Frequently Asked Questions

*I am installing a new dishwasher and/or water softener. How hard is my water?*

Hardness is dissolved calcium and magnesium which may cause a deposit on fixtures and dishes. Our average hardness is 386 ppm or 22.6 grains per gallon, hard to very hard. Our water can change depending on the water demand and the season.

*When I turn on my kitchen or bathroom faucet, the water comes out white. What is wrong?*

Dissolved air in the water causes a milky appearance. When you open your faucet, the pressure is relieved and this allows the air to form bubbles that rise to the top of the glass. It will clear within a minute, beginning at the bottom of the glass.

*I was told to flush my water heater and I don't know how to do it. Can you help?*

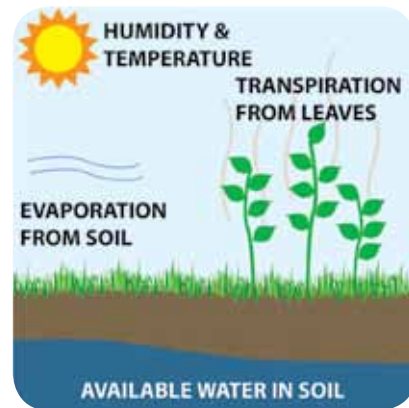
We have general instructions for flushing your water heater. To obtain a copy, please call 951-736-2234 and we will be happy to mail, fax or e-mail them to you.

*Where does the weather data for my water budget come from?*

Corona receives weather data from a weather station that is owned and maintained by the California Department of Water Resources. The weather station is a part of the California Irrigation Management Information System, or CIMIS, network and is located at U.C. Riverside. For more information on CIMIS, visit their website at [www.cimis.water.ca.gov](http://www.cimis.water.ca.gov).

*What is evapotranspiration?*

Evapotranspiration, or ET, is the amount of water that is lost to the atmosphere each day due to evaporation from the soil and plant transpiration. Evaporation is water that is lost from the soil due to factors such as wind, humidity and temperature. Plant transpiration is the amount of water that plants lose from their leaves and plant tissues. Evapotranspiration is an indicator of how much water crops, lawns, gardens and trees need for healthy growth and productivity.



### *How do I know how much my outdoor budget will be?*

Your water budget will change throughout the year, based on weather conditions. In general, your water budget will be more in the summer months, when more evaporation is happening, and less in the winter months, when we receive rain and the weather is cooler. To get a good idea of how your water budget changes, go to our website at [www.discovercorona.com/tieredrates](http://www.discovercorona.com/tieredrates) and check out our budget estimator. Simply enter your customer and account number from your water bill to see a graph of your water budget and your past water use. This will give you an idea of how much your outdoor budget will be. In order to help make sure that you stay under budget, here are some helpful tips:

- Turn off your sprinklers a day before it rains, and keep them off for several days afterward.
- Consider installing a “smart” irrigation controller; these smart controllers will adjust watering times automatically based on the weather. Rebates are available towards the purchase of these controllers.
- Check your irrigation system every couple of weeks for broken sprinkler heads and soggy areas.
- Not sure how to program your timer? Call our Water Resources Team at 951-736-2234 to schedule a free landscape check-up. Our technicians can give you recommended watering times based on your irrigation system.

### *Where can I get information on how to conserve water?*

Call us! The best way to get information on water conservation for your home or business is to call our office and talk to our Water Resources Team. Please call us at 951-736-2234. Our website also has a lot of good conservation tips and rebate information to help you conserve water. Please visit [www.discovercorona.com/dwp](http://www.discovercorona.com/dwp) for more information or e-mail [StopTheDrop@discovercorona.com](mailto:StopTheDrop@discovercorona.com).

***Español: Este informe contiene información muy importante sobre su agua potable. Tradúzcalo ó hable con alguien que lo entienda bien.***

**If you are interested in participating in decisions that affect the quality and supply of the water in the City of Corona, or for general information about this report and questions related to water quality, please call 951-736-2234.**

Regular City Council meetings are held on the first and third Wednesday of every month.



**City of Corona**

Department of Water and Power

P.O. Box 940

Corona, CA 92878



**Postal Customer**

PRESORTED  
STANDARD  
U.S. POSTAGE  
**PAID**  
PERMIT #146  
CORONA, CA